# CONTINUOUS IMPROVEMENT PROJECT DATABASE
## *CUSTOMER SERVICE PROJECTS*

| Project Name | Project Description | Division | Project Year | Contact Name | Contact Number |
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| Central Insurance Verification | Prior to the Statewide Driver License Central Issuance Project, DMV's DL/ID issuance process was performed utilizing an over the countermethodology. The over the counter methodology has been proven to be DMV's largest area of vulnerability in both the issuance process as will as overall security of facilities, equipment and DL/ID card materials. In addition, during the issuance process, the over the counter methodology afforded DMV limited time to verify the customer's identity documents prior to the customer receiving a DL/ID. The verification and record review process was deemed inefficient, arduous and untimely. Because of limitations, detection of identity fraud and identity theft occurred well after the customer received the actual DL/ID. Most often the customer would have already transferred the fraudulent issuance to another state, therefore adding more complexity to the case review.<br>The Driver License Central Issuance Project deters the attempt to obtain an issuance under false pretense. The Project has eliminated facility security vulnerabilities. DMV now houses a secure Central Print Facility within its headquarters site. The Central Issuance Project affords DMV time to complete the electronic verification process prior to mailing the DL/ID to the customer. The Central Issuance electronic verification process includes verification of lawful status in the United States which helps safeguard not only North Carolina but U.S. borders as well. The address verification process combats address fraud. The verification of social security data foils identity theft. The face recognition initiative detects multiple identities and the verification of out-of-state licenses that are transferred to NC authenticates other state's DL/IDs. If the customer information fails the verification process, the customer is notified via correspondence and the DL/ID card is withheld.<br><br>Although the Central Issuance Project has visibly changed the manner in which we conduct business with the citizens of North Carolina; DMV's effort to elevate security and the protection of citizens' data reaches far beyond the North Carolina Division of Motor Vehicles. These elevated security efforts have proven to have nationwide implications. | DMV | 2009 | Barbara Webb | (919)861-3299 |
| Special Vehicle Replica Project | According to the Bureau of License & Theft and the State, Custom-Built & Antique Registration Procedures booklet, Replica vehicles are to be titled with the year model of the vehicle they are intended to replicate. In addition, GS 20-79.4 (Historic Vehicle Owner) allows issuance of an Antique or Horseless Carriage plate for a motor vehicle that is at least 35 years old, measured from the date of manufacture.<br>Prior to implementation of the State Titling and Registration System (STARS) Vehicle Replica Project enhancement, vehicles were being titled by License Plate Agencies as antiques that were actually kits or replicas.<br>Modifications were made to STARS using existing hardware and software to allow the Special Title Unit to label a vehicle as a Replica, Street Rod, or any other approved label, or remove a label if done in error. Labeled vehicles are automatically branded as Reconstruction. The modifications were made to Titling, Registration, and Inquiry and Correspondence subsystems.<br><br>As a result of the Special Vehicle Replica Project enhancement, STARS can now:<br>1. Provide for labeling of a vehicle<br>2.Automatically brand labeled vehicles<br>3.Print the chosen label on Titling and Registration services documents<br>4.Display the chosen label for online services when appropriate<br>5.Display the chosen label on selective Correspondence<br>6.Prevent the issuance of an antique or horseless carriage plate to a Replica vehicle only. | DMV | 2009 | Jeff Martin | (919)508-1778 |

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| Field Welder Certification Program | Prior to January 1, 2006, all contractors' welders were required to be tested by an approved independent testing agency. After successfully completing the test, the testing agency issued a certification and submitted it to the Materials and Tests Unit for review and approval. The Department did not have any guidelines for what qualified a testing agency. Some testing agencies were not using qualified individuals to witness the testing. Some were not requiring a picture ID to identify the person taking the test, and, in some cases, falsified certification papers were found.<br>The Materials and Tests Unit developed a Field Welder Certification Program. This program is designed to have Materials and Tests personnel have one-on-one contact with each welder prior to them showing up on an NCDOT project. This allows M&T to verify the individual's identity by requiring a picture ID, to witness the field test, and to review the Department's and Bridge Welding Code requirements. Successful applicants are issued a Department picture certification card.<br>This program has improved the quality of welding performed on NCDOT construction projects. It has educated welders on the requirements for proper welding, the proper equipment and proper storage of welding electrodes. It brings about personal contact between the welder and a Materials and Tests Unit inspector prior to certification. | Materials & Test | 2009 | Gary Bristow | (336) 993-2300 |
| NC Improved STAA Truck Route Tools | Since the National Surface Transportation Assistance Act of 1982, North Carolina has experienced tremendous growth and significant changes in its highway system and freight needs. North Carolina's Surface Transportation Assistant Act and National Truck Network Map and supporting materials were in need of a major overhaul. In the electronic age customers, including terminal operators, trucking industry, and the enforcement community, have an expectation and need for immediate on-line access to these critical networks and North Carolina was still exclusively utilizing US Mail to send hard copies of these maps.<br>The solution involved a comprehensive multi-agency process improvement effort (NCDOT, GIS, Regional Traffic Engineering, Traffic Safety Unit, and NCSHP ) to research, investigate, and update North Carolina's National Truck Network Map while also working toward producing a version of tools that was accessible via the internet.<br>Through a multi-agency process improvement effort, the result was the Updated and Improved STAA NC National Truck Network Map tool with insets available in traditional paper and electronic (PDF) formats. | GIS and Traffic Engineering & Safety | 2009 | Terry Norris | (919)212-5950 |
| Improvements to the Driveway Permit Applications Process | Problem:<br>Over 100 driveway permit applications are received yearly in our District. A hand-written logbook was used to record receipt at the Maintenance Office but it provided no way to quickly generate reports. It may take days or months for the application to be investigated and sent to the District for final determination. When an applicant called about the status of his application, it was often difficult to quickly get the information. Various letters sent during the application review were copies of old form letters. A required list of Special Provisions was assembled using a cut and paste method from previous applications. Required detail attachments were copies of old sketches used for decades. Time and money was spent sending engineers' plans back and forth for revisions until acceptable.<br>Solution:<br>A database was created that is shared by District and Maintenance personnel to track driveway permit applications. This database allows Maintenance personnel to record the application data when received and subsequent actions taken, for District personnel to view the progress of the application process, for standard letters to be easily generated without additional data entry, for the Special Provisions to be standardized, and for reports to be easily generated. Detail drawings were recreated in CADD, converted to pdf files, and links created in the database for easy printing. Engineers' plans are now sent via email and one copy plotted for review. Multiple drawing sets are not required until everything is finalized. | Division 3, District 1 | 2008 | Karen Arriola | (910)-346-2040 |
| NCDOT At Your Door | Problem:<br>Work crews from both the Bituminous Unit and the Maintenance Unit were getting numerous calls about work along their project site from the property owners. Some calls were basic questions about what was occurring along their property and/or how long our crews will take. However, many complaints were received due to the lack of information available to the property owners. For example, one of the most common complaints that we received occurred during our Bituminous operations in which motorists noticed loose stones impacting their car.<br>Solution:<br>Door hangers allowed us to inform the property owners what our crews would be doing, what to expect while our crews are working, how their commute will be affected, and who to contact if they have any other questions. These hangers were a convenient method to contact property owners prior to work crews mobilizing. | Division 12 Cleveland Co Maintenance and Bituminou | 2008 | Steve Rackley | (704)-480-9027 |

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| Down Hole Video Inspection | Problem: The Materials and Tests Unit routinely performs video inspection of Pipe Lines and Drainage Structures using cameras mounted on remote operated, self propelled pipe rovers that are inserted into the pipe or structure that provide both real time and recorded imagery of the interior of the structure so that the condition of the structure may be assessed. Unfortunately, the equipment is bulky. The large rover (used on pipe 24 in diameter and larger) weighs approximately 285 lbs. and must remain tethered to a power/control unit mounted in a 24,000 lb. GVW support truck that includes a crane for lifting the rover in and out of the vehicle. The smaller rover (used on pipe 6-24 in diameter) weighs approximately 60 lbs. and must also be operated from the same support truck. The rovers require a minimum two-man crew to operate and are based in Raleigh. Since the equipment is based in Raleigh, the support truck is also used for other purposes (such as concrete coring), and it requires a two-man crew, response time for inspections has been less then adequate at times.<br>Solution: The Unit has acquired two Quickview Down Hole Video Inspection units that have been assigned to locations in both the eastern and western ends of the State. These units are lightweight, portable cameras that can be operated by a single technician located at the drainage structure that also provide both real time and taped imagery of the interior of the structure so that the condition of the structure may be assessed. The units weigh approximately 15 lbs. and may be used to inspect pipe 6-60 in diameter as well as shallow bridge foundations, box culverts, masonry drainage structures, and sinkholes. | Materials and Tests Unit | 2008 | Jason Fragnito | (919)-329-4203 |
| Office Assistant III Position Description Manual | Problem:<br>In the past, this position has remained vacant for months at a time. Since this Office Assistant III provides services to the DDC Department, the Safety Department, and the Moving Ahead Department, a vacancy in this position causes hardship to whomever is required to perform those duties. A good deal of the duties performed by this Office Assistant III are not the same as the duties performed by the other Administrative Assistants in the Division office.<br>Solution:<br>A detailed and organized manual was written, printed out, and also stored on the hard drive for use by whomever is filling in for this assistant during an absence or between permanent employees. | Division 10 DDC | 2008 | Cindy Iorlano | (704)-982-0101 |
| Prequalification Automation Web Application | Problem: Paper applications and limited human resources for centralization of the prequalification process. At present, all contractors are submitting paper applications. Furthermore, private consultants have to submit individual packages to every unit or branch with which they are seeking approval. With centralization, all contractors will have one primary point of contact as regards prequalification, the Construction Unit.<br>Solution: We created an online application to serve both contractors and consultants.<br>Results: Firms can now go online to submit their prequalification materials. Essentially, they will now have one primary point of contact regarding their prequalification. Some items cannot be digitized and will have to be shipped. Once information is entered, future renewals will be much simpler. The Department's reviews will also be simpler and quicker. | Construction Unit | 2008 | Greg Keel | (919)-733-2210 |
| Drought Assistance to the State's Livestock Farmers | Problem:<br>The severe drought of 2007 caused a critical shortage of forage hay for North Carolina's livestock farmers. Due to the drought, hay production in the State was 37% less than the previous year. The preliminary estimate was a shortage of 800,000 large bales of hay; later that estimate was increased to 1.8 million bales. The NCDA&CS began to seek any and all available sources of forages for livestock. One potential source was the hay mulch used annually by the NCDOT for its wildflower program.<br>Solution:<br>The NCDA&CS contacted the NCDOT Roadside Environmental Unit requesting that the DOT divert our contracted hay mulch to the State's livestock farmers, due to the extreme shortage of hay for feeding livestock. The Roadside Environmental Unit considers the request and decides to respond positively to the NCDA&CS request, in the best interest of the State's economy. Correspondence is prepared and sent to the NCDA&CS to confirm the affirmative response and to provide a list of the suppliers. | Roadside Environmental Unit | 2007 | Don C. Smith | (919)-733-2920 |

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| Tractor Mounted Brush Sprayer | Problem: Our dormant stem spray program is performed in the months of January, February and March. During this time the highway shoulders are generally wet, creating a problem for our spray trucks. Woody brush and tree limbs are gradually overtaking the shoulders, creating a safety problem and making mowing the shoulders difficult. We needed a sprayer that would get better traction and still reach the spray target.<br><br>Solution: We already had a 4-wheel drive tractor and a tractor-mounted sprayer with a front mounted boom that was used for curb and gutter spraying, but we needed a way to elevate the spray head to reach the target area. TS3 Vann Sparrow and TS2 Greg Rayburn had the idea to modify the curb and gutter sprayer with an extension, a lift device and an actuator (device to tilt the spray head). They also used spray nozzles used in another operation. This helped to hold down costs. The nozzles produce a wide spray pattern. This modified sprayer has made it possible to access areas that previously were very difficult to spray. | Operations - Division 2 | 2007 | John Wells | (252) 830-3146. |
| House Move Calculations | Problem: Most all house move reviews require repetitive type calculations involving different sets of numbers each time. The task of conducting these calculations takes time and increases the risk of miscalculations through human error.<br>Solution: A spreadsheet was developed to calculate house move data automatically. | Operations Division 8 | 2007 | Reuben Blakley | (336) 629-1423. |
| Route Audit Survey | Problem: There was a need to update and make corrections to the Pavement Condition Survey report. To do this, it was first necessary to make corrections to the Universal GIS report.<br>Solution: We began by taking a map, a copy of the maintenance road list both alphabetical and numerical and a notebook for notes into the field. Following the routes on the map, data that is posted in the field at each intersection was compared to data on the map and both maintenance road lists. When data matched up, we proceeded to the next intersection. When data did not match or was missing, a note was made of the needed corrections. After collecting all differences on the map, research was conducted to find the correct data. This research included going through maintenance road files, old GIS maps, GIS road files, the county GIS iMap, county court records and talking with people responsible for those files and reports. After finding the correct data, the unit responsible for reporting the data was contacted and given the correct data to update their files. | Operations – Pavement Management Unit | 2007 | Steven G. Hinnant | (919) 250-4094. |
| Program Development Document Management System (PDDMS) IXOS Tool | Problem: The Program Development Branch receives numerous printed project documents from various NCDOT units. Substantial time and personnel are expended to manually file and retrieve so many documents for BOT members, state auditors, and FHWA officials as needed.<br>Solution: A complete Document Management System was designed within SAP for all Program Development needs using the IXOS system that is connected to WBS. At any time, SAP users can go to the TIP Project and find pertinent documents that have been scanned to the system. This system helps to speed up retrieval for any document related to a TIP project, thus freeing up personnel for other activities. | Financial Management - Program Development Branch | 2007 | Majed Al-Ghandour | (919) 733-2039. |
| Driving Records Online | Problem: DMV had a slow and outdated process of providing driving records to the public. Time sensitive material could take up to eight to ten days to be received.<br>Solution: To use the existing mainframe database and applications to develop a new application by which customers could electronically request, and in some cases receive, save, and print Non-Certified Driving Records at their own personal computer. The new application reduces the processing time for Certified Driving Records by as much as 50 percent. The new process does not eliminate the previous system but offers the public another option which results in improved service. | Division of Motor Vehicles | 2007 | Laura Main | (919) 861-3301. |
| Notice Storage and Theft Unit Automation Project | The Notice, Storage and Theft Unit is responsible for receiving unclaimed vehicle reports filed by businesses where vehicles are garaged, repaired, parked or stored for the public and the vehicles have been unclaimed for 10 days. In 2006 this unit received and processed 49,716 unclaimed vehicle reports and 38,027 notice of intent to sell vehicle reports. Due to the manual labor in processing, there was a 4-week backlog in processing reports which created a financial impact on the owners and lien holders who had to pay storage-related fees each day the vehicle remained unclaimed.<br>A detailed feasibility study was completed in which the DOT Information Technology Unit recommended that the current systems be incorporated with the Stars Vehicle Registration System. This allowed automation of the notification letters with minimal data entry from unit employees. At a minimal cost IT and team members from the NST Unit implemented the software solution.<br>The software solution resolved the backlog, allowed owners and lien holders to save money by being notified sooner of the storage of their vehicle and helped reduce errors that resulted in tort claims. The new system provides notification letters with accurate owner, lien holder and address information. | DMV NST | 2006 | Joseph Gardner | (919)861-3137 |

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| Flowcharts for Business Processes | Problem: Many NCDOT customers, both internal and external, are not familiar with the funding process of the Program Development Branch. It is a very complicated process to understand based on the various types of funding. Examples of the difficulties faced by customers include how to receive project funding on time, what is needed for a funding request, how to validate the required information, and how to process all the details of a funding request to the Board of Transportation.<br><br>Solution: We believed that our processes were difficult for our customers to understand so we simplified these processes through the development of flowcharts. A high level of information is represented in the flowcharts that gives a complete understanding of our business process as well as validation checks for Board of Transportation funding authorization and other related issues. | Financial - Program Development | 2006 | Majed Al-Ghandour | (919) 733-2039 |
| NC Safety Summary Map Tools | Problem: Safety information is frequently presented and accessible in formats that are difficult to read and understand. In support of strategic highway safety efforts aimed at reducing fatal and severe injury crashes on North Carolina streets and highways, there was a need for additional visual mechanisms and improved formats to present aggregate safety information for a variety of safety partners.<br><br>Solution: Working with representatives of North Carolina's Executive Committee for Highway Safety (N.C. State Highway Patrol, Governor's Highway Safety Program and the Traffic Safety Unit), team members from NCDOT's GIS Unit and Traffic Engineering & Safety Systems Unit researched, developed, refined, and published a series of simple color coded three-year Safety Summary Maps. The maps visually summarize all reported vehicle crashes, large truck involved crashes and motorcycle involved crashes. | Preconstruction - Traffic Engineering | 2006 | A. D. Wyatt | (919) 733-1593 |
| NC Improved STAA Truck Route Tools | Problem: Since the original National Surface Transportation Assistance Act of 1982, North Carolina has experienced tremendous growth and significant changes in our highway system and freight needs. Largely unchanged since originally designated in the Code of Federal Register in the 1980's and subsequently into North Carolina General Statutes and Administrative Code in the early 1990's, North Carolina's Surface Transportation Assistant Act and National Truck Network Map and supporting materials were in need of a major overhaul. In the electronic age the customers (terminal operators, trucking industry, and enforcement community) have an expectation and need for immediate on-line access to these critical networks and unfortunately North Carolina was still exclusively utilizing US Mail to mail hard copies of these maps.<br>Solution: The solution involved a comprehensive multi-agency process improvement effort (NCDOT, GIS, Regional Traffic Engineering, Traffic Safety Unit, and NCSHP) to research, investigate, and update North Carolina's National Truck Network Map while also working toward producing a version of tools that was accessible via the internet. | Preconstruction - Traffic Engineering | 2006 | A. D. Wyatt | (919) 733-1593 |
| Property Owner Mowing Agreement | Problem: Property owners often do not like the method or results of machine clearing of the right of way. They would rather do the work themselves but are not always familiar with the standards required by NCDOT. They also need to be held accountable to these standards in the interest of the safety of the traveling public.<br><br>Solution: A signed agreement is executed with the property owner that contains the mowing standards. The agreement is also signed by the County Maintenance Engineer and returned to the property owner. A copy is placed in the district road file for the particular road and a copy is sent to the county maintenance facility to be placed in a mowing agreement file. The Sign Department is notified and Do Not Mow signs are placed at each end of the section covered by the agreement. Mowing contractors are notified not to mow these signed areas. If the property owner does not maintain the area to NCDOT specifications, the agreement is voided. | Operations - Division 14 | 2006 | Steve Cannon | (828) 891-7911 |
| Customized Phone Log | Problem: The Division Traffic Engineering Office typically receives an enormous number of phone calls. Sometimes as many as 20 to 30 customers contact the Division Traffic Engineer (DTE) each day asking for speed limits, traffic signals, or other concerns. It has been a very cumbersome task for the DTE to record phone calls and forward tasks to his staff or other units.<br><br>Solution: A phone log was developed to provide a quick "check box" type approach to recording and forwarding phone calls. The log captures the customer's name, phone number, nature of call, and county of origin. The log provides a check box list showing individuals who commonly receive forwarded messages from the DTE. The log also provides a check box list to indicate if the phone call was a returned call, from voice mail, from email, and if a message was left or if the customer was spoken to. Recently the customized phone log was modified to fit within the popular Covey Planner that many NCDOT employees are using. | Operations - Division 13 | 2006 | Mark Teague | (828) 251-6171 |

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| Electronic Bid Packages for DDC's and Districts | Problem: Mailing bid packages reduces by three to five days the time a contractor has to prepare bids, which shortens the amount of time the contractor has to contact prospective subcontractors. In addition, considerable time is spent copying Advertisement Letters and Bid Proposals, which translates into additional money, materials and poor environmental stewardship.<br>Solution: Rather than mailing out paper copies of bid proposal packages, password protected Word documents via email are sent. Drawings can be captured into jpeg files and emailed at the same time. If the files are too large to email, they can be transferred through the FTS system. This will save time, money, and manpower and be more environmentally friendly. Paper copies can be sent to contractors without computer access. Return receipts can be requested when sending an email to insure that the email is received. | Operations - Division 7 | 2006 | C.T. Huskins | (336) 256-0553 |
| Signing Rodeo | The Signing Section takes pride in fulfilling its mission to provide a safe and integrated transportation system to the traveling public. With this in mind, the Signing Section took on the challenge of sponsoring its first signing workshop to provide consistent statewide training. The following classes were taught:<br><br>Sign Placement and S Dimension Verification, to develop and define the concepts of sign placement, horizontal and vertical clearances, approach distances, and survey verifications.<br><br>Materials, which focused on sign retroreflectivity and the how and why of nighttime sign visibility.<br><br>Inspections, to explore practical examples of sign inspection by providing clear direction on acceptable sign installations as well as common pitfalls and their resulting problems.<br><br>Signing Supports and Storage, which gave instruction on the correct installation and application of crashworthy supports in addition to developing consistency in practice with sign storage and cover.<br><br>Sign Fabrication, which included a brief video tour of the largest sign plant in the country, followed by examples of sign fabrication | Preconstruction-Traffic Engineering | 2005 | Clarence Bunting | (919) 250-4145 |
| Bryan Blvd. Detour Revision | The contract called for a detour on Bryan Boulevard where the Western Urban Loop crossed in order to build two new bridges. The original plan was to detour traffic in one direction while building the first bridge. Then, traffic would be detoured in the other direction onto the new bridge while the second bridge was built.<br><br>The original plan would have traffic detoured for about eighteen months and called for the construction of long, temporary walls to allow for bridge construction. The contractor, APAC-Major Projects, along with English Construction, proposed that the detour alignment be redesigned to allow for both directions of traffic to be detoured at the same time, allowing the construction of both bridges to occur concurrently. | Operations- Division 7 | 2005 | Darrell Ferguson | (336) 334-3228. |
| Span Replacement | In the past five years more than a dozen bridges in Division 6 have been severely damaged enough by vehicles carrying oversized loads to warrant closing the bridge. These types of impacts usually occur to bridges with vertical clearances between 14'-5 and 14'-9. The department typically has three repair choices: 1) replace the girder but leave the clearance the same, 2) repair and raise the entire bridge, which is very costly, and 3) replace the damaged span with a cored slab span.<br><br>The third option is the most cost effective due to the fact that the work can be accomplished in less than three weeks by the department. No additional work has to be done to raise other spans nor is earthwork/paving to approaches required. Replacement of original girders with a cored slab also provides an additional 18 of vertical clearance.<br><br>The cost in traffic delays and rerouting as a result of damaged bridges is estimated to be $480,000 per day for I-95 and $17,000 per day for secondary crossings. | Operations- Division 6 | 2005 | Sonny Upole | (910) 829-6345. |

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| A, B, C's Litter Project | North Carolina has a roadside litter problem. By the end of 2004, the Department of Transportation expended more than $15 million dollars to remove more than 10 million pounds of litter from the state's roadways. Littering is both intentional and unintentional by citizens and visitors who travel the highways of North Carolina. The law defines littering as illegal and imposes fines and community service work upon those convicted. More than 4,000 litter citations were written in 2004.<br>One component to abating litter accumulation is education. Litter Project A, B, C's purpose was to utilize the K-12 classrooms as a means to promote the litter prevention message. The project undertaken was to use the Roadside Environmental Unit's State Fair Booth, within the Gardener's Flower Show section of the State Fair, as a means to promote litter prevention to the state's youth through their teachers. The Office of Beautification Programs set up a teachers' window where teachers could request a teacher's kit. The kits were comprised of Don't Litter Decals, Swat-A-Litterbug cards, temporary tattoos and stickers, litter law flyers and car litter bags that had a stop the littering message printed on one side. The kit provided litter prevention material for 30 students. | Operations- Asset Management | 2005 | George Kapetanakis | (919) 715-3188. |
| Driver License Face Recognition | Identity theft and identity fraud are the fastest growing crimes in the U.S. Theft of identity or the creation of a false identity is typically used to commit financial fraud, to escape criminal prosecution, or to expedite the commission of terrorist crimes.<br><br>DMV has a database of over 19 million customer images, representing almost 99% of all North Carolinians with a driver license or identification card. Face recognition technology is a relatively new form of biometric identifier that uses unique measurements of key facial points to create an algorithm to establish a face recognition score to match images in seconds across the 19 million images in the DMV database.<br><br>In 2005 DMV began rolling out face recognition technology. Its database is the third largest in the world, behind Pakistan and the state of Illinois. | DMV Driver & Vehicle Services | 2005 | Barbara Webb | (919) 861-3210. |
| Motor Carrier Internet Renewal | Motor carriers engaged in interstate commerce transporting federally regulated goods require a Single State Registration Receipt (RS-3). Motor carriers engaged in interstate commerce transporting goods exempt from federal regulations in North Carolina are required to have a Bingo Stamp affixed to a federal D-1 Cab Card. The motor carrier was limited to thirty-nine locations within the state where they could renew the motor carrier accounts. Otherwise, they had to rely on using the U.S. mail service to renew their accounts. This presented problems, including 1) having to rely on the U.S. mail service, 2) long waits to receive services, 3) inconvenience, and 4) large fines from citations for failure to have required documents by the renewal deadline. To minimize problems, motor carrier internet renewal was developed and implemented in January 2003. This consisted of the Single State Registration Renewal and the Interstate Exempt Renewal | Division of Motor Vehicles | 2004 | Tony Spence | (919) 861-3332. |
| IRP Clearinghouse | As a member of the International Registration Plan, there exists a reciprocal agreement between the jurisdictions to collect all monies due from each IRP registrant for all jurisdictions of travel, followed by monthly disbursement in a timely manner. This process presented several problems, including the manual process of mailing recaps/transmittals and checks each month to all jurisdictions, not receiving monies due from other jurisdictions in the timeframe established by IRP, Inc., loss of revenue from interest on monies not received in a timely manner, and reissuing checks that were lost in the mail.<br><br>To reduce these problems, North Carolina IRP joined the IRP Clearinghouse in July 2001, Currently, 43 jurisdictions participate in the program. | Division of Motor Vehicles | 2004 | Tony Spence | (919) 861-3332 |
| IRP Internet Renewal | The interstate trucking industry in North Carolina was limited to two locations in the state (Raleigh and Charlotte) to process their annual IRP renewal application. The only other option for renewal was by mail. The annual IRP renewal period for the approximately 12,000 North Carolina based carriers was open from January 1st to February 15th each year. This presented problems for carriers and service providers, including a large number of customers at each of the two renewal locations during the renewal period, long waits for customers to receive services, having to rely on the mail service, and employees working mandatory overtime. To resolve these problems, the IRP internet renewal was developed and implemented in January 2002. | Division of Motor Vehicles | 2004 | Tony Spence | (919) 861-3332 |
| Design Manual | The ITS and Signals Unit's Design Manual is used by private engineering firms, municipalities, and others, in addition to in-house staff to provide guidance in the design of signals and ITS. This manual was only available in paper format, causing delays in getting the information to the recipients. | Preconstruction-Traffic Engineering | 2004 | Greg Fuller | (919) 733-8333. |

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| Secondary Paved Road Improvement Program | Our unit has been unable to fully utilize all of our Secondary Road Funds in recent years due to the lack of available right of way and environmental issues on unpaved secondary roads in priority. Several Districts had begun to pursue improvements to the secondary paved road system to expend these funds. Additionally, G.S. 136-182 was amended to allow the expenditure of Secondary Trust Funds for safety improvements on secondary paved roads. Recognizing this, we elected to pursue a priority system similar to the unpaved secondary road priority rating system to assist in determining which secondary paved roads to attempt to pave. A team of Transportation Engineers was assembled that had experience in constructing and maintaining roads within Division 14. After a series of meetings and discussions, this team developed the Secondary Paved Road Improvement Program document. This document is used to determine the priority order in which secondary paved roads will be attempted for improvement. This document also provides guidance to the engineer on the ideal typical section based on service to be provided in the design year. | Operations-Div 14 | 2004 | Brian Burch | (828) 586-2141. |
| New Fraud Unit | The Fraud Unit was created in September 2003 within the License & Theft Bureau and is responsible for identifying fraudulent documents. The unit also assists citizens who are victims of fraud by working with local, state, and federal agencies. The unit has two certified instructors who have been trained by the American Association of Motor Vehicle Administrators. They will train DMV employees in the recognition of altered or counterfeit paper and plastic documents.<br><br>In keeping with the DMV Commissioner's mandate of one DMV, the Fraud Unit also works closely with all DMV sections to ensure fraud is not committed against the division. This ensures that records and files are accurate and that precise information is provided. It will also help to safeguard files from contamination and fraudulent information from being received, both of which will save time and money. | Division of Motor Vehicles | 2004 | R.E. Flaherty | (919) 861-3185. |
| Plastic Cylinder Crate for Concrete Cylinder Molds | The Physical Testing Lab of the Materials and Test Unit is responsible for performing compression tests on 4x8 concrete cylinders made out in the field. These cylinders represent the concrete used on NCDOT projects. It is very important that the top of the cylinders be completely level. It is also important the cylinders are not damaged when being transported to the laboratory. When the fresh concrete is cast in the cylinder molds they are supposed to be taken to a safe, level location to set up. In many instances the cylinders were set on uneven ground or they would tip over resulting in crooked cylinders. When cylinders are received in our lab considerable work went into cutting, grinding, and measuring any uneven cylinders. Another common problem was cylinders being damaged while being transported to the lab if they became loose in the vehicle. Again, once they were received, extra work had to be done in order to make the cylinders testable | Construction-Material and Tests | 2004 | Sam Frederick | (919) 733-7091 |
| Adopt-A-Highway Coordinator Manual | The State of North Carolina established the first Adopt-A-Highway (AAH) program in 1988. Each year the program saves taxpayers up to $4 million in labor costs associated with roadside litter cleanup. NCDOT administers the program through the Roadside Environmental Unit's Office of Beautification Programs. The AAH program incorporates the participation of 56 statewide coordinators at the county level. In some cases one coordinator may have responsibility for multiple counties.<br><br>It is common for coordinators to rotate out of their positions. New personnel coming in as coordinator are immediately immersed into administering the program with minimal training. Satisfaction of the coordinators and other volunteers diminishes with the lack of program knowledge. To improve satisfaction within the AAH program and fill the knowledge void for new and veteran coordinators, it was necessary to provide an AAH Coordinator's Manual for reference. | Construction-Roadside Environmental | 2004 | George Kapetanakis | (919) 715-2553 |
| Storm Relief | Due to the large number of Interstate and US highways that run through the division, each construction office has been assigned to a county to help the maintenance camps during storm events. Each maintenance camp has been allowed to use the construction personnel to best suit their needs. The construction personnel have been used to follow contract snow removal crews, help plow snow, and help clear debris from roadways | Operations-Div 7 | 2004 | Kris Lorenz | (336) 334-3228. |
| Snow and Ice Removal | Due to the large number of roads that are in the division, residential streets were the last to have snow and ice removed. This caused an increase in the number of calls and complaints from the traveling public who were not able to reach the main roads. To address this problem, each construction office has been assigned at least one vehicle that is equipped with a snowplow. These vehicles are assigned to a county maintenance camp and are used for clearing residential streets during a snow event | Operations-Div 7 | 2004 | Kris Lorenz | (336) 334-3228. |

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| 511 Travel Information Line | Travelers in NC want access to information about their trips. Several agencies within the Department of Transportation and within other public agencies have access numbers that the public can call to retrieve information. However, there was no single number that a caller could dial to access these information resources within the state. A caller must remember all the numbers to each individual agency to obtain information they desired.<br><br>The NC 511 system is a comprehensive multi-modal voice activated/voice response system that encompasses many of the different agencies that provide travel information to our customers into a single phone call. The NC 511 system provides real time travel information on impacts to our roadways due to usual events and/or weather. The system also acts like a speed dial to various other agencies.<br><br>Another feature of the NC 511 is that it has the capability of a floodgate message that allows NCDOT to input an event that is having a high impact on travel in NC (i.e., AMBER Alert). | Information Technology-Operations | 2004 | Kelly Damron | (919) 233-9331. |
| Call Center Consolidation | When customers contact the Division of Motor Vehicles they are given the option to select from three separate service areas; Vehicle Registration, Drivers License, and Liability Insurance. Once the customer has selected a particular call center the call is then transferred to a customer service representative for assistance. If the customer's question exceeds the knowledge of the answering customer service representative the caller would then have to be placed on hold and transferred to another call center. This in turn increased the wait time for customers by placing them back in queue. Upon review of the present call center system, it was decided to combine the three call centers to form a consolidated call center. | Division of Motor Vehicles | 2004 | Paula Windley | (919) 861-3332. |
| State Infrastructure Bank (SIB) Management | As North Carolina grows, many local needs for safe and efficient transportation will go unmet. Necessary transportation improvements will be shelved because of strained local budgets that meet only minimum public requirements. Transportation projects will be passed over from year to year for lack of resources to meet the local financial match responsibility. A small town or rural county may have limited revenue for basic services and lack a large enough cash reserve to match many federal and state transportation programs.<br><br>The State Infrastructure Bank (SIB) arose out of the need to improve, rehabilitate, and renovate transportation facilities. The Department of Transportation will utilize reserve balances and cash flows for loans to local governments and transportation authorities to stimulate and advance needed projects | Environment & Planning-Program Development | 2004 | Moy Biswas | (919) 714-2465. |
| T & D On-line Calendar | The Division of Human Resources' customers includes not only those applicants applying for positions at NCDOT, but also the 14,000 department employees that the division services. Since Human Resources considers the workforce the most valuable NCDOT asset, it is always looking for innovative ways to improve customer service. With employees in all counties of the state, NCDOT faces many challenges regarding communication and information sharing among its workers.<br><br>The Training & Development Section of Human Resources wanted to provide better customer service by making its training course schedule available to employees online. After management approval was gained. A committee was formed to discuss how the new process would work. The committee included an administrative person, a trainer, and a web developer from IT. | Human Resources | 2004 | Angela Crawford | (919) 662-3582. |
| Career Banding, SBP, CBP Procedures Manual | The Department of Human Resources' customers not only includes those applicants applying for positions, but they also include the 14,000 DOT employees the division services. Since HR considers the work force to be the most valuable DOT asset, it is always looking for innovative ways to improve communication and customer service. With employees in each county of the state, DOT faces many challenges regarding communication and information sharing. As the department implemented more Career Banding, Skill Based Pay and Competency Base Pay programs, HR identified a need for consistency among programs and across occupational areas, and for better communication on these programs. One way to ensure consistency, better communication, and improved customer service was to provide a procedures manual to each division, section and unit to serve as a foundation for individual program development. | Human Resources | 2004 | Angela Crawford | (919) 662-3582. |
| SDP/DBP Database Systems | The skill based pay and competency based pay database systems were each independently run. Efforts have now been made to standardize them and make them more user friendly. One of the ways that this has been accomplished is by tying the personnel main frame system information to the databases. A person entering the data only has to type in the personnel number of the employee and all data fields are populated. | Human Resources | 2004 | Angie Fanelli | (919) 733-2987. |

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| Employee Training Profile Management System | The Department of Human Resources' customers not only includes those applicants applying for positions, but they also include the 14,000 DOT employees the division services. Since HR considers the work force to be the most valuable DOT asset, it is always looking for innovative ways to improve communication and customer service. With employees in each county of the state, DOT faces many challenges regarding communication and information sharing. Since the implementation of Skill Based Pay and Competency Based Pay, training (which is a key element in these programs) has become the focus of customer service and communication improvement projects. With many sections/units conducting and tracking training, records and data management was fragmented. Also, it was frustrating to employees trying to track their training and to managers trying to report and analyze training data. To resolve this issue, a committee was formed to develop a web-based application to serve the needs of all training groups. It would give employees and managers easy access to records as well as better tools for productivity and efficiency. | Human Resources | 2004 | Angela Crawford | (919) 662-3582. |
| SBP/CBP Training Toolbox | The Department of Human Resources' customers not only includes those applicants applying for positions, but they also include the 14,000 DOT employees the division services. Since HR considers the work force to be the most valuable DOT asset, it is always looking for innovative ways to improve communication and customer service. With employees in each county of the state, DOT faces many challenges regarding communication and information sharing. As the department implemented more Skill Based Pay (SBP) and Competency Base Pay (CBP) programs, the SBP/CBP Training Work Group noticed a need for consistency among various training programs across the state, and a need for tools to help divisions, sections and units develop their SBP/CBP training programs in an efficient, effective and consistent manner. A SBP/CBP Training Toolbox was created. | Human Resources | 2004 | Angela Crawford | (919) 662-3582. |
| LE Training Request System | The Department of Human Resources' customers not only includes those applicants applying for positions, but they also include the 14,000 DOT employees the division services. Since HR considers the work force to be the most valuable DOT asset, it is always looking for innovative ways to improve communication and customer service. With employees in each county of the state, DOT faces many challenges regarding communication and information sharing. The old training request process included a long paper trail from the employee, to the supervisor, to the training administration unit for approval or denial. Compiling data on requests, approvals and denials was a cumbersome process of going through numerous files. The License & Theft Unit wanted to streamline the request process and make it easier for management to monitor and track the training that had been requested, approved or denied | Human Resources | 2004 | Angela Crawford | (919) 662-3582 |
| Interstate Salt Brine Application Equipment | To allow for pretreatment of Interstates 77 and 85 with brine, two used 5000 gallon chemical tankers with chlorobutyl linings to prevent corrosion were purchased. These units were delivered to the Charlotte Equipment Shop where preventive maintenance was performed on all lighting and brake systems. Each unit was equipped with a hydraulic driven water pump, electrical control valves, spray nozzles, and cab mounted controls. This retrofit allows the operator to choose two or three lanes of coverage from the operator's seat. Two Road Oil Unit road tractors not being used during snow and ice removal were used to pull the tankers. The tankers were also equipped with hoses and valves to allow them to transport brine product from the brine plant to several remote storage locations within Division Ten.<br><br>Two smaller hydroseeders from the Landscape Unit were used to apply brine on the on/off ramps and overpasses on the interstate routes. The hydroseeders were retrofitted with electrical valves, spray nozzles and cab controls that can spray one or two lanes from controls in the cab. | Operations-Div 10 | 2004 | Rick Mabry | (704) 596-2131. |
| Hydraulic Hose Machine | The Monroe Shop did not have the equipment to fabricate hydraulic hoses. When needed, the hoses were ordered or purchased from outside vendors.<br><br>A hydraulic hose crimp machine was purchased for the Monroe Shop, and the fittings and hoses were added to the shop's parts inventory. | Operations-Div 10 | 2004 | Edward Hill | (704) 283-6242. |
| Skill Based Pay Learning Improvement | According to the National Institute for Literacy, more than 20% of adults read at or below a fifth grade level. In the course of developing the CPI project, we discovered that 25% of our transportation workers have significant literacy needs. To overcome this problem, the CPI team created several Skill Based Pay (SBP) books on tape. A team member reads the books aloud and records himself or herself on tape so that employees with reading difficulties can participate in the SBP program without being embarrassed about their educational limitations. | Operations- Division 7 | 2004 | Michael Venable | (336) 570-6833 |

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| Use of Light Weight Aggregate | Loose aggregate on asphalt surface treatments has always been one of our major concerns. Complaints from property owners have been received due to excess aggregate that had been broomed into their yard to allow for road painting. Tort claims for cracked windshields and chipped paint have resulted. To solve this problem, we looked to the light weight aggregate suppliers in North Carolina for a material that has the same gradation of 2-MS sand. This enabled us to use the light weight aggregate screenings on our last application of asphalt emulsion to lock the quarried aggregate in place. This process allowed us to drop the final application of asphalt emulsion from .2 gallons per square yard to .16 gallons per square yard. This also enabled us to use only five pounds per square yard of light weight aggregate screenings versus 12 pounds per square yard of quarried aggregate. Light weight aggregate screenings that did not adhere to the asphalt emulsion were blown to the right of way and dispersed. | Operations- Division 7 | 2004 | Mark Fogleman | (336) 334-3192. |
| Improved Research Products & Technology Transfer | Research & Development Unit solicits, promotes and manages research for all modes of transportation. Unit currently facilitates 80 contract research projects ranging from use of bio-diesel fuels to using innovative polymer materials for bridge rehabilitation and taking between 1 and 3 years and costing between $30,000 and $1.5 million. Recently R&D has implemented a process which involves faster dissemination of research results through the use of web sites, interactive CD's, video, datasets and software developed as part of the research. This has led to research customers throughout DOT being able to implement research in a more timely and powerful manner through a more efficient and effective means of technology transfer. | Research & Analysis | 2003 | Rodger Rochelle | (919) 715-4657 |
| ROW-EFS | Historically, ROW files including deeds and agreements, individual project claim files, appraisals and other documents have been filed as hard copy documents within an ever-expanding series of file rooms and storage cabinets. Due to space restrictions, 3,000 files annually had to be transferred to State Records Center which were then destroyed after 10-15 years and lost to both ROW and general public.<br>ROW put in an electronic scanning and filing system in place.This system allows immediate access to needed information to multiple users and eliminates hard copy filing.<br>Also, when internal network is expanded to Division offices, more user will be able to easily access files. | PreConstruction ROW | 2003 | Grady Morris | (919) 733-7932 |
| CARS & HP320 Pilot Project | Currently, CARS is used to track citizen concerns by NCDOT and Form HP320 is used by the Highway Patrol to track citizen complaints about highways and rights of way. The HP320 is sent to DOT to address the problem and the back of form is completed and returned to Highway Patrol after issue is resolved. New process allows SHP to enter info directly into CARS instead of HP320. Old process took approximately 4 weeks to turn around, while new process provides real-time notification to appropriate unit and allows DOT to respond to issues in more timely manner. | Operations Div 4&7 | 2003 | Debbie Leonard | (252)237-6164 |
| GIS Map & Data Distribution | Previously, DOT county maps were distributed by another unit during limited hours - 78% of maps were 4 years old, thus outdated. GIS created the GIS Distribution Center (DC) to serve as central location for processing and distributing GIS info and products.<br>In December, 2002, county map distribution was transferred to the DC which created a central location for creation and distribution of maps.<br>Map sales are now recorded in an electronic database. Improved communications have been initiated between the DC and mapping sections.<br>Customers may contact the DC between 8 am and 5 pm, and most requests are filled within 24 hours | GIS | 2003 | L.C.Smith | (919) 212-5000 |
| Special Provisions & Standard Drawings on the Internet | Previously, consultants would have to request special provision and drawings for erosion control from the Soil & Water Section of the Roadside & Environmental Unit. Hard copies would then be mailed to consultant. Soil & Water and Emerging Technologies Section designed and implemented a web site from which the consultants could retrieve the standard drawings and special provisions. Contractor's no longer have to formally request items and wait to get them back.<br>Also, having drawings online facilitates revisions to drawings | Roadside Environmental | 2003 | Derek Smith | (919)733-2920 |
| Enhancements to On-Line TIP | Previously, access to TIP online was gained by clicking on links labeled by NCDOT division.<br>This was useful to personnel familiar with division geography, but very confusing to others. In addition, project location maps were accessed by separate links.Beginning with the 2004-2010 TIP, the web site was reconfigured to provide users a clickable map of the state showing both counties and divisions. Users may also access projects by category. Also, a second enhancement allowed the user to pull up all data for a project from one place and data was provided in separate window formatted for printing. | TIP Unit | 2003 | Brian Padfield | (919)733-2039 |

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| IRP Internet Renewal | The Interstate Trucking Industry in North Carolina was limited to two locations in the state (Raleigh and Charlotte) to process their annual IRP renewal. At the time, applications or renewals could be processed by mail. The annual IRP renewal period for the approximately 12,000 North Carolina based carriers runs from January 1st through February 15th of each year. This presented numerous problems, such as hundreds of customers at each IRP Headquarters office each day during the renewal period, extremely long waiting time for customers to receive service, having to rely on the mail service, and employees working mandatory overtime. To overcome the problem, an IRP Internet renewal was developed and implemented in January 2002. | DIVISION OF MOTOR VEHICLES | 2002 | Lois Warren | (919)861-3503 |
| Duplicate Driver License On-Line Service | The number of driver license customers has been increasing 5% to 6% per year for the last several years but the number of examiners has remained the same. This has resulted in long lines, especially in high growth areas. In January 2001 a team was assembled to review the possibility of issuing driver licenses via the Internet. Under statute duplicate licenses can be issued for persons with a change of address, lost or stolen license, or damaged license.<br>The team initially developed business rules to accommodate the average customer as well as keep within the guidelines established by North Carolina General Statutes. The challenge was to create a user friendly, yet secured application that required a minimum of user interaction and time. Security issues were discussed with Massachusetts, Ohio and Virginia DMVs. Based on these states' experiences, the team developed a process for issuing duplicate driver licenses over the Internet incorporating a Personal Identification Number (PIN) to enhance security. | DIVISION OF MOTOR VEHICLES | 2002 | Barbara Webb | (919)861-3210. |
| Liability Insurance/Notice of Termination FS-4B | The Vehicle Financial Responsibility Act of 1957 requires all vehicles registered in North Carolina to maintain continuous financial responsibility. Insurance terminations are received from insurance companies upon cancellation of a policy. The customer has 20 days torespond, after which, the license plate is revoked for 30 days. Prior to October 2001 STARS (State Titling and Registration System) did not interface with LITES (Liability Insurance Tracking Enforcement System) to display multiple insurance lapses. License plate agencies do not access LITES and are unable to advise customers of pending insurance lapses when current insurance penalties are collected. This created confusion for the customer as notification for a subsequent insurance lapse was generated the next business day requesting the customer to respond within 20 days to avoid revocation. If the customer was not aware of subsequent insurance lapses, the notification was often ignored and the license plate was eventually revoked for failure to comply. | DIVISION OF MOTOR VEHICLES | 2002 | Brenda Freeman | (919)861-3332. |
| Establishing Performance Measures for Motor Vehicle Inspectors | The DMV Enforcement section have uniformed and non-uniformedpersonnel. Non-uniformed personnel, known as inspectors, are charged with the responsibility of investigating auto theft, administering the safety and emission inspection program for motor vehicles, and the licensure and regulation of automobile dealers. The staff is required to provide data regarding the activities of all personnel. Typically, the requests may originate as legislative inquires or due to budgetary planning needs. To compound the problem, activities of inspectors are difficult to quantify, as they conduct a wide variety of different types of investigations that range greatly in the amount of time needed for completion. working team was organized to address the problem. The team developed a computerized Excel form, which allowed inspectors to electronically transmit a monthly report to their district offices. In turn, the district offices copied and pasted the report on a spreadsheet and transmitted a district summary to headquarters. | DIVISION OF MOTOR VEHICLES | 2002 | B. A. Riggs | (919)861-3135. |
| Online Submission of Oversize/ Overweight Permit Application | Due to 2000 legislative changes in the North Carolina Motor Vehicle Law and the NCDOT Administrative Code, both of which govern issuance of Oversize/Overweight (OS/OW) permits, the volume of applications for permits greatly increased. This required both the DOT Central Permit Office and the trucking industry to do more with less. Implementation of the Automated Routing Permit System (ARPS) brought a more efficient application process for obtaining the OS/OW permits. Prior to installation of the ARPS Internet web application program in August 2001, movers had four options for requesting an OS/OW permit. These options were telephone, facsimile, in person, or by mail. The two options most often used, telephone and facsimile resulted in lost productive man-hours for both the movers | OPERATIONS - PERMIT | 2002 | Gwen Hobby | (919) 733-4740. |
| Guardrail Placement Rating System | With limited funding available, a fair and efficient system for evaluating the locations that warrant the installation of guardrail was needed. An unfunded need list was in existence that contained projects that were several years old. It was very difficult to determine the priority of a project in order to maximize the limited funding available.<br>The team included NCDOT engineers as well as a lieutenant from the State Highway Patrol and a county commissioner. All members had a stake in the placement of guardrail. To determine opinions on the current method of guardrail placement, a questionnaire was completed. This established a baseline from which to work. It was determined that there was no standardized guardrail priority system. The team determined items to consider and ranked them in order of importance. Point values were then assigned to each of the factors considered. | OPERATIONS - DIVISION 13 | 2002 | Mark Teague | (828) 251-6171. |

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| Salt Brine System | The salt brine system was developed in order to provide a higher level of service to the public during the onset of snow and ice events, primarily in Henderson County. The system currently in operation has two mix bins and 20,000 gallons of storage capacity. We have six tandem truck tanks with a capacity of 1,200 gallons each and two tanks with a capacity of 2,500 gallons each that mount on a low boy. | OPERATIONS - DIVISION 14 | 2002 | Mark Gibbs | (828) 891-7911. |
| NCDOT Division of Highways Design-Build | Our office is currently administering a one-of-a-kind project. It is an alternative contracting method known as Design/Build, and is the first of its kind under the 1998 Design/Build legislation in the state of North Carolina. Interstate 77, which currently carries 73,000 cars per day on four lanes, is being widened from two to four lanes in each direction for approximately 8.9 miles from I-85 to just north of the proposed Charlotte Outer Loop in Mecklenburg County. A highway project such as this would traditionally take about two and a half years with the construction lasting for about three years. The highway project would, therefore, normally take about five and a half years to complete. However, under Design/Build, the team has committed to open all lanes to traffic by December 2003 and was able to begin construction on December 3, 2001, which means a little more than two years under construction. | OPERATIONS - DIVISION 10 | 2002 | Leslie Reynolds | (704) 982-0101. |
| NC 16 Widening Project #6.780002 | two-lane section of roadway into a three-lane curb and gutter section on NC 16. Problems with the task included: 1) No purchase of right of way could be obtained due to limited funding. 2) The section of roadway included residential and commercial property. 3) There was no recorded DOT right of way on 97% of properties. 4) One property owner was trying to organize the other property owners into an opposition of the project unless they were compensated monetarily. The first goal at hand was to head off the negative criticism by informing each property owner of the DOT's intentions and explain the positive benefits the widening would have on their property. Alexander County Maintenance employees conducted several informal meetings with property owners. Most were initially against the project. During these meetings it became evident that many would be willing to give up the necessary right of way in exchange for things like additional driveway entrances and something in writing indicating that the DOT would not take any additional property. | OPERATIONS - DIVISION 12 | 2002 | John Cook | (704) 876-4001. |
| Woody Construction Debris to Useable Lumber | Over the past year, logs were accumulated from roadway cleaning debris and stored at the Pitt County sandpit. Rather than paying a landfill a tipping fee to dispose of these trees, a local person with a portable sawmill was contracted to come to the pit and saw the logs into usable lumber. When about 20 logs were accumulated the portable sawmill wascalled. These 20 logs yielded 100 - 2" x 6" x 16' boards, and 40 - 2" x 10" x 16' boards. The sawyer charged $500 for his labor. | OPERATIONS - DIVISION 2 | 2002 | Woody Jarvis | (252) 946-3689. |
| Truck Mounted Snow Plow Lift Arm Extension Bracket | The existing truck mounted snowplow lift arms did not lift the bladeshigh enough. It was decided that an extension bracket on the lift arm could be fabricated and installed to allow the blade to be lifted to a greater height. The extension is cut out of a piece of steel stock and weldedtogether. It is bolted on the existing lift arm rather than welded, so that it can be removed when necessary | OPERATIONS - DIVISION 13 | 2002 | Jerry Murray | (828) 298-0692 |
| Lift Cable Tool | services packages and mechanic service packages, the lift cables are often found to be defective. In the past when these cables were replaced it was very difficult to obtain the correct tension on the new cable. This would often lead to premature cable failure due to cable backlash. Also, at best, it took two mechanics to install the lift cable. The Monroe Shop Team came up with a solution to this problem. A cable tension tool was designed and built. This tool hooks to the rear of the vehicle and the new cable is routed through it, when the cable is wound on the crane lift drum, it has the correct tension on it. | OPERATIONS - DIVISION 10 | 2002 | Charles Hatley | (704) 283-6242. |
| Development of CD of Pesticide Labels & Safety Information | Annually, by competitive bid process, NCDOT's Central Roadside Environmental Unit purchases a diverse array of pesticides for Division field forces. These pesticides are necessary tools for managing vegetation along the State's 78,000 miles of rights-of - way. Every vendor is required to supply 50 labels and MSDS's for every product they are awarded. It is required that this information be the most current available from EPA. In previous years no monetary penalty was associated with this contract thus vendors would: 1) Supply the wrong label and MSDS for the specific product formulation requested; 2) Provide illegible photocopies of the labeling; 3) Try to shift this responsibility to the manufacturers. 4) Fail to provide this material in a timely fashion despite repeated telephone calls. | OPERATIONS - ROADSIDE ENVIRONMENTAL | 2002 | Derek Smith | (919) 733-2920. |
| GPS for Secondary Road Improvements | Each year the District Office is responsible for staking, preparing construction plans (known as "Straight-Line Diagrams", obtaining right-of-way, and construction. These plans were used for right-ofway acquisition, environmental permit applications, and roadway construction. The Straight-Line Diagrams did not include any curve information and contained very limited property boundary information. The District Office needed a way to reproduce the right-of-way on the parcels more accurately.The District Office Survey Crew used a Trimble Pro XR GPS unit to collect topographic data for the roads on the Secondary Construction Program. The information is processed and construction plans are prepared using Micro-station and Geopak on CADD workstation. The plans include horizontal alignment information, proposed roadway and right-of-way, property boundaries including bearings and distances, property owners, and erosion control information. | OPERATIONS - DIVISION 11 | 2002 | Charles Reinhardt | (336) 385-2257 |

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| Asphalt Roller Types | The Division Bitumous unit has been using a classcode 2510 Asphalt roller. It is not designed for or held up well in seal type operations. It only compacts 3' of roadway at a time creating long waits for crews amd lost production time.. Replaced by a classcode 2507 viberatory roller which has increased overall production. This roller covers 4' in one pass and is twice as fast. It is also desgined for aggreagates used by the Bitumous unit. | OPERATIONS - DIVISION 2 | 2002 | Cleve Woolard | (252) 830-3146. |
| NC OSH 300 Form Statewide Teleconference | The Federal DOL and NC OSHA adopted the use of three new forms and reporting procedures for incidents/injuries beginning January 2002, a statewide requirement for the private and public sector. Failure to abide by the new regulation could result in OSHA fines and a loss of information related to safety programs. Training on the use of the new forms and procedures was only available through costly seminars provided by private companies or through sessions presented by OSHA at various Community Colleges. State agencies and municipalities do not have the same issues as the private sector, thus the OSHA all-inclusive training would be lengthy and not as cost effective. Although never before utilized for the statewide training of a large segment of state employees, the use of a statewide teleconference to provide the necessary information to these entities was a logical choice. | SAFETY & LOSS CONTROL | 2002 | Chuck Stanfill | (919) 250-4200 x 241. |
| Productivity Services Marketing Survey | As part of a broader marketing strategy for the unit, Productivity Services wanted to gain insight into the level of awareness other NCDOT units have with our range of services. A decision was made to develop a brief questionnaire. A team prepared a draft questionnaire for review among all unit members. The survey form consisted of a measurement for overall familiarity with the role of Productivity Services, an indicator concerning use of the section's services over the past three years, and a measurement for level of awareness of Productivity Services' various offerings. Recipients were also asked to indicate if they would like to be contacted with additional information. The questionnaire was distributed by mail to all senior managers as well as division/unit/section managers throughout the department. | FINANCIAL | 2002 | Doug Cox | (919) 733-2806 |
| County Maintenance Map TIF Image Conversion & Distribution | County Map users were having difficulty reading Microstation files downloaded off the GIS web site correctly. A new digital product was needed to allow users to view county maps without the use of specia CAD software. TIF images were decided to be the best format to help distribute consistent maps over the GIS web site Digital images made it easier for other units in DOT (as well as the general public) to view all 282 county map sheets. County maps are available on the GIS web site and are updated after every workday.<br>Maps can be plotted directly from the TIF image if a hard copy is necessary and small sections can also be printed. If an office had a PhotoShop software or paint program such as Adobe PhotoShop, areas could be highlighted or additional text could be added before the image is printed and allow users to customize their own maps. | PLANNING & ENVIRONMENT | 2002 | Terry Norris | (919) 250-4188 x 204. |
| Realignment of the Planning Units | Assessment of our capabilities in meeting the future demands of state and local officials, agency and environmental partners and the citizens of North Carolina. As a result of this assessment, we have determined that our organizational structure limited our ability to provide effective and efficient transportation planning service for all of North Carolina. The Planning Group of the Statewide Planning Branch realigned along geographic boundaries. Under the new alignment, transportation planning for the MPOs, RPOs, counties and small urban areas would be done by staff on a geographically based team with the state broken down into six regions, including the Mountains, Metrolina, Triad, Triangle, Southeast and Northeast. | PLANNING & ENVIRONMENTAL | 2002 | Laura Cove | (919) 715-5737. |
| Turning Movement Request Form | The Traffic Survey Unit collects different types of traffic related data for many users in the Statewide Planning Branch. Turning Movement s are one type of traffic count that is required for most project work and model updates. Historically, requesting turning movements counts required a memo specific to the project location, a map and two forms that had to be manually completed for each project. A requestor could take up to several hours to complete all the necessary forms for just one project. Additionally, the Traffic Unit was relocating to a remote location from the branch, so additional lead-time would be required to send the required to send the request by interoffice mail or unit. | PLANNING & ENVIRONMENTAL | 2002 | Kent Taylor | (919) 733-4705. |
| NC Traffic Signal Operations & Maintenance | There are approximately 8,000 traffic signals on the NC State Highway System for government agencies to maintain and operate. Operations and maintenance activities have been fragmented with a lack of a baseline performance standard for division staff, municipal personnel, and contractors. This project established requirements for a good traffic signal system management program to promote safe, efficient function of traffic signals along the State Highway System.<br>The program promotes a transition from emergency maintenance activities to preventive maintenance activities. Included in the program is the updating of municipal maintenance agreements. Reimbursement schedules for the municipalities were updated and five levels of service were established to ensure baseline standards are met. The program further establishes methods for performing audits including a signal inventory and maintenance tracking systemto electronically track maintenance calls, equipment inventory,<br>worked performed, and work time. | PRECONSTRUCTION | 2002 | Troy Peoples | (919) 733-3915 |

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| Guidelines for Agreement Process & Reimbursement to NCDOT by Municipality/Developer | When a developer/municipality requests a change to be made to an active DOT project, such as adding a left or right turn lane, a problem occurred in incorporating these design changes and collecting the cost associated with the changes. It created difficulty for our Design and Construction engineers to determine what steps to follow to execute the request. In addition, the developer or municipality did not know whom to call to track the progress of the request. A cross-functional team was developed. The team was responsible for the preparation of guidelines to follow when additional design or construction improvements are requested on active TIP projects. Theteam was also responsible for developing a way to show how the new process will help NCDOT to be reimbursed for improvements | PRECONSTRUCTION | 2002 | Wayne Johnson | (919) 250-4128 |
| English/Metric Project Special Provisions | With the Department's implementation of the metric system unit of measurements on construction projects, traffic signal project special provisions were developed as two separate document files; one for metric units of measurement and one for English unit of measurements. This made it necessary to ensure two separate, but similar, documents were simultaneously kept up-to-date. It also increased the potential for errors in translating English to metric values or visa-versa, as well as the potential for the project special provisions with the incorrect system of measurements being selected for a particular project. | PRECONSTRUCTION | 2001 | Richard Mullinax | (919) 733-3915 |
| Publication of AADT Maps on the Internet | The Traffic Survey Unit responds to many requests for traffic information from the public. Previously, customers had to provide a description of the location they needed data for over the telephone. The data was researched while the customer was on the telephone for small requests, or a list was provided and the data was faxed for larger requests. Some customers had to purchase maps to meet their traffic data requirements. Many customers had expressed interest in being able to view on the Internet the Annual Average Daily Traffic (AADT) maps that are published annually. A team was organized to develop a better way to serve external customers.<br><br>The team coordinated with the GIS Section to determine what was needed to provide Internet access to maps. Arrangements were made to print our publication with a contractor who used printing technology that produces electronic images of large-scale maps. We implemented a quality control process to ensure the scanned images were legible and complete. The images were placed on a web image server and the GIS Section set up a viewing application. The web pages and viewing application were tested and altered to better suit a user's needs. Web pages are updated annually and electronic images are produced internally. | PRECONSTRUCTION | 2001 | Kent Taylor | (919) 733-4705 |
| Directional Drilling | Two methods have accomplished the process of installing conduit under existing roadways in the past. The least preferred method was to physically cut out a section of the roadway, open a trench, and install the conduit. Once the conduit was installed and the trench compacted, the roadway was replaced.<br>The second method is known as Jack & Boring. In this process a pit is dug and a horizontal drilling machine is placed in the pit, which basically drills a hole under the roadway in which a conduit is to be pulled back through. This process, while preferred over open cutting the roadway, has drawbacks. In most areas there is not enough right-of-way to place the machine or a suitable pit area cannot be selected due to the underground utilities that are already present.<br>Traffic Management Systems has adopted directional drilling as the preferred method. The drill head is launched from ground level at an angle into the ground and makes a bore under the roadway. However, in this process the drill head can be controlled by the operator who controls the drill head's horizontal and vertical positioning underground. A locating device that is operated by a second individual tracks the drill head. When the drill head reaches its exiting point, it is removed and a back reamer is installed in its place, along with the conduit to be pulled back through. | PRECONSTRUCTION | 2001 | Greg Fuller | (919) 733-8021 |
| Standard Strain Pole/ Metal Pole with Mast Arm Designs | Traditionally, the use of wood poles at signalized intersections has been the most common method for suspending signal head assemblies over a roadway. The use of strain poles / metal poles with mast arms was generally limited. Initially cheaper to install, wood poles require a higher level of maintenance over strain poles/ metal poles with mast arms. Strain poles / metal poles with mast arms provide for a longer service life and more consistent strength over time. Generally, there is no hardware tightening, and no re-treatment of the assemblies is necessary to ensure reliable service life. Unlike wood poles, strain poles / metal poles with mast arms may have a salvage value at the end of their service life and pose no hazardous material disposal concerns. A major disadvantage of strain poles / metal poles with mast arms was the time consuming preliminary engineering for the department and pole fabricators.<br>Recognizing this, a task force was established between the Signals and Geometric Section and the Structure Design Unit to develop standard strain poles / metal pole with mast arm designs for use statewide at signalized intersections. As a result, the work group developed and has implemented new standard designs. The standard designs are applicable for about 80 90 percent of the installations requiring strain poles / metal poles with mast arms. | PRECONSTRUCTION | 2001 | Richard Mullinax | (919) 733-3915 |

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| Traffic Signals: Review & Approval Process for Private Developers | Traffic signals are being installed by private developers at an increasing rate. These signals, although privately funded, still must be approved by DOT through permits, agreements, and plan review. Longer review turnaround times have resulted due to increasing volumes. Though a review process was in place, many developers, PEFs, and even DOT personnel were unaware of the existing procedure. In addition, although steps to the process were defined, no time frame was specified for the amount of time required to follow each step. A committee was formed to review and revise the approval process and educate all involved parties on the revised process. The ultimate goal was to accelerate the approval process though clarity and education.<br>The committee was comprised of representatives of municipalities, PEFs, and all areas of DOT in an effort to involve all aspects of the approval process. The committee met many times over an 18-month period, carefully examining every step of the approval process for efficiency, clarity, and time frames. | PRECONSTRUCTION | 2001 | Ken Ivey | (919) 715-7736 |
| Environmental Streamlining for Enhancement Projects | All projects receiving federal funding must undertake an environmental review consistent with the National Environmental Policy Act (NEPA). Environmental documentation for Enhancement projects typically are Categorical Exclusions (CE), but could require the more detailed Environmental Assessment (EA) or Environmental Impact Statement (EIS). CEs are further subdivided into Type 1 and Type 2 CEs. For projects requiring a CE review, the NCDOT had developed a standard eight-page form to be submitted. For the Enhancement projects, Enhancement staff (in conjunction with PD&EA and FHWA staff) have developed two methods to streamline this environmental documentation requirement. | PLANNING & ENVIRONMENT | 2001 | Rob Ayers | (919) 733-2039 |
| Enhancement Program Implementation: Project Manager's Guide | In 1998, the Board of Transportation decided to allocate a portion of the Federal Enhancement funds externally to communities in order for these communities to implement projects. This differed from past guidance, as between 1991 and 1997 the BOT allocated all of the Enhancement funds internally to support Department goals. Statewide Calls for Projects were held in 1999 and 2000, resulting in more than 160 awards to communities throughout the state. Although these projects were all included in the Transportation Improvement Program, the Enhancement staff (initially two employees--now four) were tasked with managing these project, including the oversight of all aspects of project development--from project inception through project completion. Essentially the Enhancement staff had to learn about all of the relevant issues associated with program implementation, and then create a management system for these projects.<br>Enhancement staff developed the Enhancement Program Implementation: Project Manager's Guide (hereafter referred to as the "document") to assist DOT project managers with project management. In addition, this guide is distributed externally to award recipients to assist them in project implementation. Processes, relevant state and federal guidelines, and sample documents have been researched and compiled into this one source. | PLANNING & ENVIRONMENT | 2001 | Rob Ayers | (919) 733-2039 |
| Point of Contact List | The mission of Statewide Planning is to provide a "customer responsive process" as a part of our partnership with local officials in the state's 17 MPOs, as well as other NCDOT branches. A large portion of each MPO Coordinator's time is spent answering questions concerning the status of TIP projects in their area, although project specific work is done in other branches of NCDOT (Roadway, PD&EA, Public Involvement). Citizens often find NCDOT to be vast and confusing when seeking information on their own.<br><br>In order to improve both internal and external communications, as well as provide quick and accurate responses, several coordinators have created a point of contact list for TIP projects in their area. At a minimum, this list provides the name and telephone number of a contact for the latest project information in each of the pre-construction areas. Other information that may be included is the stage of the project, opportunities for public involvement, e-mail addresses, and construction start date. | PLANNING & ENVIRONMENT | 2001 | Beverly Williams | (919) 733-4705 |
| Streamlining Street Name Database Processes | The Secondary Roads Group of the GIS Unit-Road Inventory Section maintains a cross-reference file of state maintained secondary roads and their respective numbers. This file is updated monthly. The file has been maintained on the NCDOT mainframe system for years. When a list of a county road number/name file was needed, the request would be made by phone, mail, e-mail, or walk-in. The request would usually take 3 or 4 days to be delivered. Other circumstances, such as orders of 15 counties or more that required an invoice to be prepared or digital copies, added up to two additional days.<br><br>Realizing the need for a more efficient system for distributing this information, the programming staff of the LRS Group of the Road Inventory Section was called upon to build an Access database of the file with update capability, report production, and availability over the Internet. A program was developed over a three-week period whereby the file could be updated with networked computers. Short reports could be printed in the Road Inventory Section immediately, and completed reports of the entire file could be printed and bound into a book the same day in the NCDOT Reproduction department | PLANNING & ENVIRONMENTAL | 2001 | L. C. Smith | (919) 250-4188 |

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| T.I.P. Web | The Transportation Improvement Program provides state and federal government agencies, the business community, and the citizens of our state with a comprehensive document for the transportation projects within the State of North Carolina. Up until this year the only means of providing project information has been in printed format - one book containing scheduling information and the second book consisting of maps for the highway construction portion of the T.I.P. Each of the books has a production cost of $25.00, and additional cost is incurred for postage.<br>This year for the first time all the information contained in both of these books is on the Internet. The text information stored in a Microsoft Access Database, an Excel Spreadsheet, or a Word Document were converted to an .PDF file type and incorporated into the T.I.P. web site. The 1692 individual project maps were converted to .JPG file type, and links to these individual project maps were created by outlining the project alignment (location) on the fourteen division maps.<br>To date the Transportation Improvement Program (T.I.P.) web site has had over 55,000 hits since going online on June 7, 2001. | PLANNING & ENVIRONMENTAL | 2001 | Chuck Short | (919) 733-2039 |
| Human Resources Reorganization | The Division of Human Resources for DMV operated autonomously from the Department's Human Resources Office. This created duplication of effort, cost deficiencies and confusion for managers and employees. The DMV is one of the many divisions staffed to DOT. There were 8 positions staffed to the DMV HR Office that provided the same services to 2,000 employees that 16 staff members provide 12,000 DOT employees. To ensure consistency, reduce expended resources and increase productivity the DMV HR function was consolidated into the DOT HR Office. The DOT HR Office absorbed some of the DMV employees into vacant positions within the DOT HR Department. One of the DMV employees came over and assumed the role for vacancy postings and another position came to the section to perform Personnel Technician duties in reviewing DMV hiring packages for qualification status. Another Personnel Technician remained on site to provide benefits and retirement services to the DMV employees. This position will report to the DOT Benefits Manager. Two other positions were transferred to our Training and Development Division. | HUMAN RESOURCES & INTER-GOVERNMENTAL | 2001 | Becky Keith | (919) 733-5846 |
| HR Web Page Redesign | The Division of Human Resources was interested in improving its external customer service and communication through a more simplified and user friendly website. In reviewing our previous website, we noticed areas that were hard to navigate, and identified areas that needed redesigning, which would assist DOT employees, other state agencies, and the general public. More importantly, we realized that our customers might not necessarily understand all the personnel terms therefore making it hard to navigate or find various topics such as sick leave, salary ranges, and job postings.<br>A team was formed to review the website for ease of use, range of services, and communication of programs, policies and services. A timeframe was also established as to when our new website would be available for on-line customer service. The team leader worked with the various sections in personnel such as Merit-Based Hiring, Salary & Policy Administration, Retirement & Benefits, Personnel Training, Personnel Recruitment, and Position Management to coordinate collecting information to be put on the web pages. | HUMAN RESOURCES & INTER-GOVERNMENTAL | 2001 | Angela Strach | (919) 733-5846 |
| Rest Area Forms Reduction | The Central Roadside Environmental Unit's Rest Area Section receives several different reports monthly from the Divisions. Each Rest area turns in monthly, a daily meter reading, a monthly usage survey, a recycling report and Division Inspection reports. The Division inspects contractor-maintained rest areas a minimum of 3 times weekly. This paper work, along with monthly invoices, Weekly Contract Supervisor Worklogs and Employees Monthly Worklogs are all very important for the day to day administering of the Maintenance contracts by the Divisions. When low bid maintenance of rest areas was first begun, the central office monitored it very closely for any problems that might arise with the proposals, that are generated in this office, and to insure that the Department was getting the service that we expected. Since the program has matured over the years and is now a normal practice, the close monitoring of all the day to day paperwork by the central office is no longer necessary. The Divisions have been asked to no longer send copies of the Monthly Invoice, Supervisors Weekly Worklog, and Employees Monthly Worklog to the central office. They should keep all originals in their files until the contract is complete. The central office does want to remain aware of the condition of the facilities. Therefore, the Divisions have been requested to send in a copy of 1 weekly inspection report for each facility, instead of the original 3 inspections per week. Many of the Divisions are now sending the reports and inspections by E-mail. | OPERATIONS ROADSIDE ENVIRONMENTAL | 2001 | Jennifer Pitts | (919) 733-2920 |

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| Windsor Probe | Materials and Tests Unit performs investigations on materials that do not meet the minimum requirements for specifications. One investigation involves in-place strength of concrete when test cylinders do meet the required strengths. In the past, M&T would remove cores from the structure and then test for strength. This method is the most accurate, the most costly and time consuming. The time and cost makes this method not very economical. The Rebound Hammer, a non-destructive test system, was then introduced as a strength indicator and became the standard for our investigation and recommendation. The rebound hammer system requires ten different readings within a specified area. These readings are then averaged and strength is then interpolated using a graph. This method is very quick and efficient, but there have always been questions concerning the depth at which the individual readings can measure. A large percentage of the investigations using the Rebound Hammer still required a core sample be taken to achieve an accurate measure. Recently M&T has purchased six Windsor Probe Test Systems to be used statewide. | OPERATIONS MATERIALS & TESTS | 2001 | Sam Frederick | (919) 733-7091 |
| Skill Block Tracking | The Skill Based Pay Program recognized four functional areas of maintenance operations-roadway, roadside, bridge and traffic services. Approximately 4,000 transportation workers (TW's) participate in this program. Since inception of the program grants on average 2,000 skill blocks per year. An important factor in administering and monitoring the Skill Based Pay Program is the ability to monitor and track the awarding of skill blocks to TW's. Prior to June 2000, Position Management collected data on skill blocks that were granted at six-month intervals. This data was entered into an Excel spreadsheet and then distributed to each division. The divisions would then cut and disburse the segments to the appropriate people for them to interpret. This process was used from the inception date of the program August 1996. By 1999, the spreadsheet had grown to approximately six feet in length and become unmanageable and almost impossible to interpret | OPERATIONS - MAINTENANCE | 2001 | Don Aschbrenner | (919) 733-3725 |
| Subdivision Review | In the year 2000, the Salisbury District Office reviewed the design of 60 proposed subdivisions for their compliance with state standards. Included in this review was the analysis of the proposed storm drainage system of new subdivision roads. In the past, all subdivision plans with curb and gutter were sent to the Hydraulics Unit in Raleigh for a review of the storm drainage. This process took an average of three weeks per subdivision for the plans to be mailed to Raleigh, reviewed, and returned to the district office.<br><br>To reduce the amount of time necessary to review each subdivision, an engineer from the Hydraulics Unit came to the district office and trained the technicians in the district so that they were competent to perform some of the reviews in-house. | OPERATIONS DIVISION 9 | 2001 | David Lipe | (704) 639-7560 |
| Night-time Spray Operation | The installation of several miles of median guardrail provided a challenge for the Division to maintain the vegetation in the median. In many areas, the median was not wide enough for the roadside mowers to operate without closing the left lane of interstate. Spraying had not been performed in the interstate median of this Division for several years due the volume of traffic. We found that if we closed the left lane on the interstate with a slow moving caravan during the daytime, the traffic bottlenecked and accidents occurred. We also had too many near misses which caused this operation to be unsafe. The best option to maintain the vegetation in the median was with the plant growth regulators and herbicides, as this has been done in the eastern region of North Carolina for years. We chose to try nighttime spraying.<br><br>In the nighttime spraying operation, we had the advantage of much less traffic volume. Also, the lighting used on arrow-boards and flashing lights were much more visible. We were concerned about impaired motorist so we only sprayed Sunday through Wednesday nights. The only equipment modifications we did were to add reflective tape to the vehicles and install lights on the spray boom. These lights were adjusted to light the area the nozzles were spraying and not to blind oncoming traffic. | OPERATIONS DIVISION 12 | 2001 | Phil Fox | (704) 480-9020 |
| AAH & the Spanish Speaking Community in NC | The steady increase in the growth of North Carolina's Spanish-speaking population offers an opportunity for the Adopt-A-Highway (AAH) program to grow as a multicultural anti-litter program and increase its effectiveness in keeping our state clean and beautiful. It was decided that the basic tools needed to support the participation of the Spanish speaking community in the Adopt-A-Highway program were a Spanish language volunteer highway safety training video and informational brochure. The N.C. Agency for Public Telecommunications expertly provided the services to accomplish our goal. As a consequence, North Carolina is the first state to provide an AAH brochure ("Cómo adoptar una carretera en Carolina del Norte") and highway safety training to its Spanish-speaking community in the Spanish language. | OPERATIONS ROADSIDE ENVIRONMENTAL | 2001 | Anne Walker | (919) 715-2550 |

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| Traveler Information Management System (TIMS | In the aftermath of Hurricane Floyd, over 1,500 roads were closed due to flooding. Motorists attempting to return home or check on relatives and friends needed to know the conditions of the road system. Emergency responders such as the Red Cross needed to get supplies to the persons stranded in flood areas. The Traveler Information Management System (TIMS) was created to provide real-time road condition information to as many people as possible via the Internet.<br>The purpose of the system is to have a central location where the public, media, emergency service providers, other state and federal agencies, and NCDOT personnel can go for real time information on the condition of the state's highways. TIMS provides this location while minimizing the amount of additional work required of NCDOT field forces. TIMS automated several existing paper processes performed by NCDOT field personnel related to road condition. Information relating to road construction and maintenance, bridge projects, ice and snow conditions, and road closures are now collected at one site and provided to anyone with access to the Internet. In addition, TIMS allows NCDOT users to subscribe to the system and be alerted, via e-mail or pager, when an incident that meets their pre-set criteria is entered into the TIMS system. | OPERATIONS ITS | 2001 | Kelly Hutchinson | (919) 233-9331 |
| -95 Welcome Center Parking Notification in Northampton County | An on-going problem was identified involving excessive overnight trucker parking at the I-95 Welcome Center (southbound) in Northampton County, just south of the NC/VA State line. The truck parking lot at this facility has nineteen marked spaces. Actual counts of parked trucks were taken at random times overnight, and revealed that routinely there were as many as 50-60 trucks. Trucks were parked along grassed or soiled shoulders, exit and entrance ramps, and curb and gutter sections. The problems created involve safety and maintenance issues.<br>A work group was formed to address the problem and offer suggestions for improvements. Several permanent, long-range solutions were suggested but with funding uncertainties, a short-term pilot project was decided upon for implementation. The pilot project recommendation consisted of placing a portable trailer-mounted Changeable Message Sign (CMS) along I-95 southbound, in Virginia, in advance of the Welcome Center for notification to truckers that no parking spaces are available. | OPERATIONS DIVISION 4 | 2001 | Steve Hamill | (252) 237-6164 |